

Confirmation No. 4573

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	BELLERS	Examiner:	Tran, T.
Serial No.:	09/966,038	Group Art Unit:	2622
Filed:	September 28, 2001	Docket No.:	US010583US
Title:	DYNAMIC SAMPLING		

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**REPLY BRIEF**

Mail Stop Appeal Brief-Patents  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Customer No. <b>65913</b>
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Dear Sir:

This is a Reply Brief submitted pursuant to 37 C.F.R. § 41.41 for the above-referenced patent application. In this Reply Brief, Appellant maintains the arguments set forth in the Appeal Brief filed October 16, 2008 and addresses the Examiner's Answer mailed January 23, 2009.

Appellant maintains that the rejection of claims 1- 20 should be reversed.

No fee should be required for the filing of this Reply Brief. However, if deemed necessary, authorization is given to charge/credit Deposit Account number 50-0996 (NXPS.570PA) for all fees/overages.

**I. Status of Claims**

Claims 1-2, 4, 6-9, 11, 13-16, 18 and 20 stand rejected, and claims 3, 5, 10, 12, 17 and 19 stand objected to as being dependent upon a rejected base claim, but were indicated as containing allowable subject matter. Claims 1-20 are thus presented for appeal, with the understanding that claims 3, 5, 10, 12 and 17 include allowable subject matter (and are thus not discussed separately under the grounds of rejection).

**II. Grounds of Rejection Under Appeal**

- A. Claims 1-2, 4, 7-9, 11, 14-16, and 18 stand rejected under 35 U.S.C. § 102(b) over Page (U.S. Patent No. 4,755,795).
- B. Claims 6, 13 and 20 stand rejected under 35 U.S.C. § 103(a) over Page (U.S. Patent No. 4,755,795) <sup>1</sup>.

**III. Appellant's Reply Argument**

The following discussion is presented both as a response to specific arguments presented in the Examiner's Answer and as further support for Appellant's positions stated in the underlying Appeal Brief (which addresses issues raised in the Examiner's Answer). In this Reply Brief, Appellant addresses five issues. The first issue relates to the Examiner's addition of a new reference and a new § 103(a) rejection, and corresponding failure to identify the new grounds of rejection. The second issue is common among each of the Examiner's responses, and relates to the lack of correspondence between the cited power-based bandwidth determination and the claimed image-based spatial frequency determination. The third issue is also common among each of the Examiner's responses, and rebuts specific mischaracterizations by the Examiner, which relate to the misinterpretation of various digital signal processing circuits in the primary reference. The fourth issue addresses aspects of the primary reference that teach away from the claimed invention, and the related modification of the primary reference that subverts the primary reference's purpose.

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<sup>1</sup> The Grounds of Rejection are unclear as the Examiner added a new reference (U.S. Patent No. 6,473,008) in combination with the '795 reference.

Appellant requests that the following discussion be considered by the Board in conjunction with Appellant's Brief to reach a favorable decision. In an effort to avoid burdening the Board, Appellant invited the Examiner to telephone the undersigned to discuss the above (and maintains the invitation, prior to the issuance of any corrected Examiner's Answer or the issuance of a new (non-final) rejection in reopening prosecution).

**1. The Newly-Cited '008 Reference Results In A New Ground Of Rejection That Is Impermissible Under The M.P.E.P. And Further Fails To Comply With The Requirements Of § 103(a)**

Appellant submits that the newly-cited '008 reference as presented in the Examiner's Answer constitutes a new ground of rejection, that the new grounds should be identified (in a corrected Examiner's Answer), and that Appellant should be afforded an opportunity to respond to the new grounds under M.P.E.P. §1207.03.

Specifically, the Examiner's Answer introduced a new § 103(a) rejection that recites the '008 reference in the Statement of Rejection of claims 6, 13 and 20, and further discusses the '008 reference in two paragraphs of supporting discussion at page 7 of the Examiner's Answer. However, the Examiner's Answer did not identify the new grounds, and the new grounds were neither approved nor prominently identified as required (*see, e.g.*, M.P.E.P. §1207.03, indicating that new grounds are present where the evidence relied upon in support of the rejection is not the same as in previous rejections). In this instance, the Statement of Rejection had not previously recited the '008 reference, and no supporting evidence regarding the proposed combination of references and/or motivation therefore had been previously presented. Accordingly, the evidence relied upon in support of this new § 103(a) rejection is clearly different than in the Final Office Action. Appellant's representative discussed these new grounds with the Examiner via telephone conversation on March 18, 2009, during which the Examiner cited to M.P.E.P. §2144.03 as support for introducing new grounds. However, Appellant submits that M.P.E.P. §2144.03 is directed to Final Office Actions rather than Examiner's Answers, and maintains that the new grounds are improper as discussed above. Appellant accordingly requests that a corrected Examiner's Answer be presented or, in the alternative, that prosecution be reopened to afford the

Appellant an opportunity to address the newly-cited '008 reference and its proposed combination with the '795 reference.

**2. The Cited Power-Based Signal Bandwidth Determination  
In The '795 Reference Does Not Correspond To  
Image-Based Signal Processing Of Video Data**

Appellant argued in the Appeal Brief:

The Office Action's assertion that the '795 reference adjusts its sampling rate based upon spatial frequencies is also wrong. The cited portions of the '795 reference adjust a (digital signal) sampling rate at the resampler 17 using a comparison of "the overall power of the input signal to the power of a portion of the input signal in a certain bandwidth" (see column 3:26-28). This power-based comparison is to ensure that frequency components are "within the chosen bandwidth" (see column 3:32). The '795 reference's sampling rate adjustment is thus not only carried on a digital signal, it further does not disclose modulating a variable sampling rate "based upon spatial frequencies within the image content" as claimed (see claim 1 and related limitations in other independent claims).

The Examiner answered (at page 10):

The claimed "spatial frequency" can be defined as "the frequency of change per unit distance across an image". The analyzing the probability that the frequency components of the input signal are within the chosen bandwidth of Page determines "the frequency of change per unit distance across an image."

Appellant replies that the attributed quotation "the frequency of change per unit distance across an image" is not disclosed in the '795 reference, and further maintains that the '795 reference does not involve any image-based processing of video data. Appellant has reviewed the '795 reference and cannot ascertain any discussion of video data, of an image, or of spatial frequency variation across an image. The Examiner's Answer's assertion that "analyzing the probability that the frequency components of the input signal are within the chosen bandwidth" somehow corresponds to determining "the frequency of change per unit distance across an image" is untenable. Appellant fails to see any correspondence between the cited bandwidth determination and the claimed spatial frequency-based comparison, and the Examiner has provided no explanation (or evidence) whatsoever to explain any such

correspondence. Moreover, the cited bandwidth-range determination in the '795 reference provides no manner in which to determine relative spatial frequencies within an image (*e.g.*, a "highest spatial frequency" as in claim 1). Accordingly, the record is devoid of any disclosure, teaching or suggestion as to how the '795 reference's power-based sampling to determine whether a signal is within a particular bandwidth provides correspondence to the claimed spatial-frequency based processing of video image data. Appellant thus submits that all rejections should therefore be reversed.

**3. The Cited Circuits In The '795 Reference Do Not Process Analog Signals And Are Not Arranged As Claimed**

Appellant argued in the Appeal Brief:

The cited portions of the '795 reference involve digital signal sampling and related processing, which is fundamentally different than the claimed analog signal sampling approach. In short, the Examiner's attempt to equate the analog-to-digital converter 13 with the claimed sampling mechanism is contrary to the specification of the '795 reference and cited portions therein, and fails to show correspondence to the claimed invention. Not only does the converter 13 fail to sample an analog signal at a variable sampling rate as suggested in the Final Office Action (the rate appears to be fixed), the cited sampling rate adjustment occurs *after* the converter 13 and is carried out upon a *digital* signal. For instance, the resampler 17 cited at page 3 of the Final Office Action operates on a digital signal presented after the converter 13 to selectively compress digital data for storage (*see, e.g.*, FIG. 1 and column 2:61 – 3:2). As described at column 2:61-67 and column 3:9-24, this sampling and compression is carried out upon a digital signal, in connection with related digital processing such as the addition of bits. Clearly, the resampler 17 operates on a digital signal and the cited sampling rate adjustment is carried out upon this digital signal.

The Examiner answered (at page 9):

The claimed "a sampling mechanism" is anticipated by the combination of ADC 13, the time delay 19, and the resampler 17 of Page. The combination of the ADC 13, the time delay 19, and the resampler 17 of Page samples the analog signal at a variable sampling rate as claimed.

Appellant responds that the cited analog-to-digital converter 13 and resampler 17 in the '795 reference do not correspond to a sampling mechanism as claimed, in that they do not

process an analog video signal, do not compare spatial frequencies within that signal and do not sample at a variable rate that is based upon any frequency comparison. While the time delay 19 had not previously been cited in combination with the ADC 13 and the resampler 17 (apparently introducing another new grounds of rejection), this new combination again fails to provide correspondence to claim limitations directed to sampling an analog signal at a variable sampling rate that is set based upon a comparison of spatial frequencies within an image. As discussed above, the sampling rate variation is bandwidth-based and is carried out after conversion to a digital signal (see column 2:53-60). Appellant therefore submits that the rejections of all claims are unsupported and must be reversed.

**4. The ‘795 Reference Teaches Away From The Proposed Modification, Which Further Undermines The Stated Purpose Of The ‘795 Reference**

Appellant argued in the Appeal Brief:

Appellant furthermore submits that one of skill in the art would not be motivated to modify the sampling rate of digital data for storage thereof using the spatial frequency of video content in an analog signal as suggested, and that such a modification would undermine the purpose of the ‘795 reference. As stated in the Abstract, discussion of objects at column 2:7-11 and replete throughout the ‘795 reference, the purpose of the ‘795 reference involves adjusting the digital sampling rate of a signal based upon the signal’s bandwidth. Modifying the reference to sample an analog signal, rather than a digital signal, and to do so based upon the spatial frequency of image data rather than the bandwidth thus completely undermines the purpose of the ‘795 reference. Moreover, the ‘795 reference’s sampling of a digital signal based upon the bandwidth of the digital signal and corresponding Fourier transform (*see, e.g.*, column 3:66-4:5) teaches away from the proposed modification, because the modification would result in the sampling of an analog signal, rather than digital, upon which the indicated transform cannot operate.

Applicant submits that the Office Action’s failure to provide evidence or rationale for combining the cited references, and the resultant undermining of the purpose of the ‘795 reference, are improper and contrary to the M.P.E.P. and relevant law. See, for example, M.P.E.P. § 2143.01; *In re Gordon* 733 F.2d 900 (Fed. Cir. 1984); and *KSR Int’l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1741 (U.S. 2007). Appellant therefore submits that there is no motivation for combining references as asserted.

The Examiner answered (at pages 11 and 12):

The capability of selecting the rate for each segment of the analog video sampling is at least twice a highest spatial frequency within content contained by the corresponding segment of the analog video signal is old and well known in the art and shown in the newly cited reference Kelly et al .... [i]t would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the well-known Nyquist sampling into Page's system in order to increase the quality of the video signal because sampling the video signal using at least twice a highest spatial frequency will reduce noise of interference.

Appellant responds that the alleged motivation "to increase the quality of the video signal" is inapplicable because the '795 reference does not describe such a signal or sampling such a signal. Applicant further reiterates that replacing the bandwidth-based modulation with the claimed spatial frequency-based modulation would render the '795 reference inoperable for its purpose of estimating the overall bandwidth of the incoming signal (*see, e.g.,* column 3:40-44). In this instance, the § 103(a) rejections are improper because the '795 reference fails to disclose processing video data based upon differences in spatial frequencies in images therein, and modifying the '795 reference to do so would accordingly replace its aforesaid power-based bandwidth determination. Accordingly, Appellant requests that the § 103(a) rejections be reversed.

Moreover, as indicated in the *KSR* decision cited above, "when the prior art teaches away from combining certain known elements, discovery of a successful means of combining them is more likely to be non-obvious." Accordingly, the rejections are also improper because the '795 teaches away from the claimed invention. As all rejections are based upon the '795 reference and as the '795 reference teaches away from the claimed invention, Appellant believes that all rejections should be reversed.

**IV. Conclusion**

In view of the arguments presented above and those arguments presented in the Appeal Brief, Appellants submit that the rejections are improper, the claimed invention is patentable, and that the rejections of claims 1-20 should be reversed. Appellants respectfully request reversal of the rejections as applied to the appealed claims and allowance of the entire application.

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